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*Copy of
Pages 6 & 7*

To: Examiner Chris Atkinson**From:** Bradley J. Diedrich/kln**Fax:** (703) 308-7764**Pages:** 15 + Coversheet**Phone:****Date:** July 23, 2002**Re:** U.S. Serial No.: 10/002,670**cc:**☒ **Urgent**☐ **For Review**☐ **Please Comment**☒ **Please Reply**☐ **Please Recycle**

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Thank you.

● **Comments:** Pursuant to our telephone conference today, attached are the documents previously forwarded to you on June 26, 2002.

Bradley J. Diedrich
(248) 594-0651

R0153997.DOC

Serial No. 10/002 670 Filed: 10/23/01 Attorney: BGD/KL
 Applicant: Urich et al. Docket No.: 65857-0036 Date Mailed: 6/26/02
 Title: An Conditioner with Internal ☐ Courier ☒ First Class Mail ☐ Express Mail No.
 The following was/were received in the U.S. Patent & Trademark Office Mail Room on the date stamped hereon:

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Filing Form for Application*

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- ☐ Provisional Application under 37 CFR 1.53(a)
☐ Regular Application under 37 CFR 1.53(b)
☐ CPA Application under 37 CFR 1.53(d)
☐ Continuation Application under 37 CFR 1.53(e)
☐ Divisional Application under 37 CFR 1.53(b)
☐ Cont. In Part Application under 37 CFR 1.53(b)

☐ Design☐ RCE☐ Other _____

*Patent Application including:

- ☐ Pages Specification
☐ Pages Claims (Claims 1 through _____)
☐ Pages Abstract
☐ Sheets of Drawings (Fig. 1 through _____)

Declaration/Power of Attorney (_____ pages)

Verified Stmt-Small Entity Status

Executed Power of Attorney

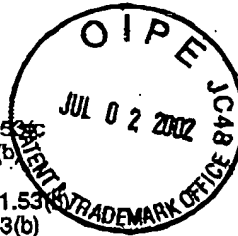
☐ Priority Document(s) No. _____ & cover sheet☐ Assignment(s) & cover sheet

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with _____ Sheets of Red-Line Drawings

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Amendment (Response)

Preliminary Amendment (Response)

Response to Election Restriction Requirement

Information Disclosure Statement, with

Form(s) PTO-1449 (_____ sheets) and

copies of references

_____ Affidavit or _____ Declaration under

37 CFR _____ \$1.131 _____ \$1.132

Notice of Appeal

Petition _____

Status Inquiry

Issue Fee Transmittal

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Other: Communication to Examiner
Christopher Mark Andersen
a Applicant of Brad G.
Dudrick w/ exhibits A+B

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JUL 23 2002

GROUP 3700

Practitioner's Docket No. 65,857-0036

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: ULRICH, et al.

Serial No.: 10/002,670

Group No.: 3743

Filed: 10/23/2001

Examiner: ATKINSON, Christopher Mark

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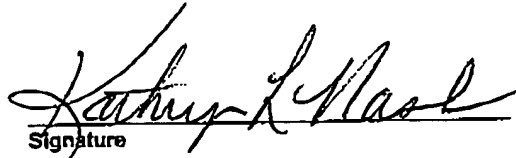
GROUP 3700

For: AIR CONDITIONER WITH INTERNAL HEAT EXCHANGER AND HEAT EXCHANGER TUBE THEREFOR

Attention: Examiner Christopher Mark Atkinson
Patent & Trademark Office
Washington, D.C. 20231

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))

I hereby certify that this correspondence is, on the date shown below, being:

☒ deposited as first class mail,
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Atkinson, Patent & Trademark Office,
Washington, D.C. 20231☐ transmitted by facsimile to the Patent and Trademark Office.
Signature

Date: June 27, 2002

Kathryn L. Nash

COMMUNICATION TO EXAMINER CHRISTOPHER MARK ATKINSON

Applicants acknowledge receipt of the Office Action dated April 24, 2002, paper number six (6,) which incorrectly indicates that the sole claim pending in the application is claim 31.

Applicants filed a Second Preliminary Amendment on January 22, 2002, which amended claim 31 and added new claims 32-60.

Applicants submit a copy of the return postcard filed with the Second Preliminary Amendment that includes the OIPE post mark dated February 8, 2002.

A true and correct copy of the postcard is attached as Exhibit A to the declaration of Bradley J. Diedrich that is submitted herewith. Applicants also submit true and correct copies of the Second Preliminary Amendment and coversheet previously filed, which are attached as Exhibit B to the declaration of Bradley J. Diedrich.

Practitioner's Docket No. 65,857-0036

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: ULRICH, et al.

Serial No.: 10/002,670

Group No.: 3743

Filed: October 23, 2001

Examiner: ATKINSON, Christopher Mark

For: AIR CONDITIONER WITH INTERNAL HEAT EXCHANGER AND HEAT EXCHANGER TUBE THEREFOR

Attention: ATKINSON, Christopher Mark
Patent & Trademark Office
Washington, D.C.

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GROUP 3700

Declaration of Bradley J. Diedrich

Dear Sir:

I, Bradley J. Diedrich, am the applicants' representative responsible for prosecution of the patent application entitled "AIR CONDITIONER WITH INTERNAL HEAT EXCHANGER AND HEAT EXCHANGER TUBE THEREFOR" application number 10/002,670, and I hereby declare that:

1. I am a patent attorney at Rader, Fishman & Grauer PLLC.
2. On January 22, 2002 I caused to be filed with the U.S. Patent & Trademark Office

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Signature

Date: June 27, 2002

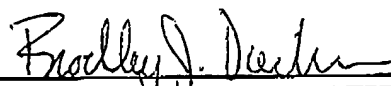
Kathryn L. Nash
(type or print name of person certifying)

via first class mail a Second Preliminary Amendment and a return post card identifying the document.

3. Attached hereto as Exhibit A is a true and correct copy of the return postcard received from the U.S. Patent Office indicating that the Patent Office received the document on February 8, 2002.

4. Attached hereto as Exhibit B is a true and correct copy of the Second Preliminary Amendment and coversheet as filed on January 22, 2002.

Dated: June 27, 2002


SIGNATURE OF PRACTITIONER

Bradley J. Diedrich, Reg. No. 47,526
Rader, Fishman & Grauer PLLC
39533 Woodward Avenue, Suite 140
Bloomfield Hills, Michigan 48304

Tel. No.: (248) 594-0651

Serial No. 10/002,670 Filed: 10/23/01 Attorney: B9D/Ken
 Applicant: Ulrich, et al. Docket No.: 65857-0036 Date Mailed: 1/22/02
 Title: Air Conditioning with Integral Nest ☐ Courier ☒ First Class Mail ☐ Express Mail No.
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- ☐ Originating in the U.S.
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☐ Divisional Application under 37 CFR 1.53(b)
☐ Cont. In Part Application under 37 CFR 1.53(b)

☐ Design☐ RCE☐ Other _____

*Patent Application including:

- ☐ Pages Specification
☐ Pages Claims (Claims 1 through _____)
☐ Pages Abstract
☐ Sheets of Drawings (Fig. 1 through _____)

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Amendment (Response)

Preliminary Amendment (Response) second

Response to Election Restriction Requirement

Information Disclosure Statement, with

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copies of references

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GROUP 3700

Ex A

Serial No. 10/002,670 Filed: 10/23/01 Attorney: B9D/Ken
 Applicant: Ulrich, et al Docket No.: 65857-0036 Date Mailed: 1/22/02
 Title: Air Conditioning with Integral Heat ☐ Courier ☒ First Class Mail ☐ Express Mail No.
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	___ Provisional Application under 37 CFR 1.53(c)
	___ Regular Application under 37 CFR 1.53(b)
	___ CPA Application under 37 CFR 1.53(d)
	___ Continuation Application under 37 CFR 1.53(b)
	___ Divisional Application under 37 CFR 1.53(b)
	___ Cont. In Part Application under 37 CFR 1.53(b)
	___ Design
	___ RCE
	___ Other _____
	*Patent Application including:
	___ Pages Specification
	___ Pages Claims (Claims 1 through _____)
	___ Pages Abstract
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	Petition for _____ Mo. Extension of Time
	(in duplicate if charging deposit account)
	Amendment (Response)
X	Preliminary Amendment (Response) <u>Second</u>
	Response to Election Restriction Requirement
	Information Disclosure Statement, with
	Form(s) PTO-1449 (_____ sheets) and
	copies of references
	_____ Affidavit or _____ Declaration under
	37 CFR _____ \$1,131 _____ \$1,132
	Notice of Appeal
	Petition _____
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	Issue Fee Transmittal
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	Other: _____

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JUL 23 2002

GROU...
 E & B

Attorney Dock t: 658 100 (AEQU PA 25 US)


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Ullrich et al.

Serial No.: 10/002,670

Filed: October 23, 2001

For: AIR CONDITIONING WITH INTERNAL HEAT EXCHANGER
AND HEAT EXCHANGER TUBE THEREFORCommissioner of Patents
Washington, D.C. 20231

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with sufficient postage as first class mail, in an envelope addressed to the Commissioner of Patents, Washington, DC 20231	
Date: <u>January 22, 2002</u>	 Signature <u>Kathryn L. Nash</u>

SECOND PRELIMINARY AMENDMENT

Dear Sir:

Please amend the application as follows prior to examination on the merits.

IN THE CLAIMS

Please rewrite claim 31 as set forth below in clean form. Additionally, in accordance with 37 CFR 1.121(c)(1)(ii), amended claim 31 is set forth in a marked-up version in the pages attached to this amendment.

Attorney Docket: 657 6 (AEQU PA 25 US)

31. (Once Amended) A heat-exchanger tube suitable for use in an internal heat exchanger of a motor-vehicle high-pressure air-conditioning system, the heat-exchanger tube comprising:

a central channel having an inner wall from which a plurality of projections extend into the central channel; and

a plurality of outer channels that are arranged concentric to the central channel and that are separated from each other by partitions.

Please add the following new claims.

32. (New) The heat-exchanger tube according to claim 31, wherein the number of partitions is greater than the number of projections.

33. (New) The heat-exchanger tube according to claim 31, wherein the width of the outer channels at their radially inner side is smaller than the height of the outer channels measured in the radial direction.

34. (New) The heat-exchanger tube according to claim 31, wherein the width of the outer channels at their radially outer side is smaller than the height of the outer channels measured in the radial direction.

35. (New) The heat-exchanger tube according to claim 31, wherein the sides of the partitions are substantially parallel.

36. (New) The heat-exchanger tube according to claim 31, wherein all outer channels exhibit a substantially similar cross section.

37. (New) The heat-exchanger tube according to claim 31, wherein the outer channels exhibit at least two different cross sections.

Attorney Docket: 65: 0036 (AEQU PA 25 US)

38. (New) The heat-exchanger tube according to claim 31, wherein all partitions exhibit a uniform wall thickness.

39. (New) The heat-exchanger tube according to claim 31, wherein a wall is provided between the central channel and the outer channels, the wall having a thickness that is greater than the wall thickness of the partitions.

40. (New) The heat-exchanger tube according to claim 31, wherein a first wall region is provided between the central channel and the outer channels, the first wall region having a thickness that is greater than the thickness of a wall region that seals the outer channels from an outside surface of the heat-exchanger tube.

41. (New) The heat-exchanger tube according to claim 31, wherein the outer channels exhibit a wedge-shaped cross section.

42. (New) The heat-exchanger tube according to claim 31, wherein the central channel exhibits a substantially cross-shaped cross section.

43. (New) The heat-exchanger tube according to claim 31, wherein the projections exhibit a substantially triangular cross section.

44. (New) The heat-exchanger tube according to claim 31, wherein the projections include sides that form an angle of approximately 90 degrees with respect to each other.

45. (New) The heat-exchanger tube according to claim 31, wherein the projections are ribs.

46. (New) The heat-exchanger tube according to claim 45, wherein the ribs are substantially straight in the axial direction.

Attorney Docket: 65: 0036 (AEQU PA 25 US)

47. (New) The heat-exchanger tube according to claim 31, wherein the tube material is aluminum.

48. (New) A heat-exchanger comprising:
a heat-exchanger tube that includes a central channel having an inner wall from which a plurality of projections extend into the central channel and a plurality of outer channels that are arranged concentric to the central channel and that are separated from each other by partitions.

49. (New) The heat-exchanger according to claim 48, wherein the heat-exchanger tube includes two ends that are each connected to a connecting piece having a collection chamber that combines all outer channels into one channel.

50. (New) The heat-exchanger according to claim 49, wherein the connecting pieces include a means for uniformly distributing a fluid stream between the outer channels or for uniformly combining a fluid stream arriving from the outer channels.

51. (New) The heat-exchanger according to claim 50, wherein the means of uniformly distributing or combining the fluid stream is a diffuser chamber.

52. (New) The heat-exchanger according to claim 51, wherein the diffuser chamber is substantially conical and includes at least two channels.

53. (New) The heat-exchanger according to claim 50, wherein the means for uniformly distributing or combining the fluid stream is a twisting chamber.

54. (New) The heat-exchanger according to claim 53, wherein the twisting chamber exhibits a substantially cylindrical cross section.

55. (New) The heat-exchanger according to claim 53, wherein the twisting chamber includes a connection having a longitudinal axis that does not intersect a longitudinal axis of the connecting piece.

Attorney Docket: 65f 0036 (AEQU PA 25 US)

56. (New) The heat-exchanger according to claim 49, wherein the connecting pieces on both ends of the heat-exchanger tube are substantially similar to each other.

57. (New) The heat-exchanger according to claim 49, wherein the connecting pieces are connected to the heat-exchanger tube by a press-fit connection.

58. (New) The heat-exchanger according to claim 57, wherein the press-fit connection is a press-fit connection produced through plastic deformation of the connecting pieces.

59. (New) The heat-exchanger according to claim 57, wherein the connecting pieces include a connection base having a tubular needle that extends into the central channel and that is connected to the inner wall of the central channel by the press-fit connection.

60. (New) An air-conditioning system suitable for use in a motor vehicle, comprising:

- a compressor that provides a compressed fluid to an output;

- a condenser that is connected to the compressor by a cooling line for cooling the compressed fluid;

- an expansion valve that receives the cooled fluid through a high-pressure line from the condenser and outputs the fluid to an evaporator;

- a return line through which the fluid from the evaporator is returned to the compressor; and

- a heat exchanger having a heat-exchanger tube that includes a central channel having an inner wall from which a plurality of projections extend into the central channel and a plurality of outer channels that are arranged concentric to the central channel and that are separated from each other by partitions; and

wherein the central channel is connected to the high-pressure line and the outer channels are connected to the return line.

Attorney Docket: 658' (AEQU PA 25 US)

REMARKS

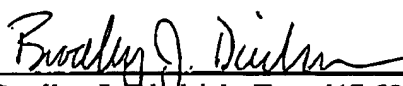
Claims 1-30 were previously canceled by a Preliminary Amendment submitted with the present application as filed on 10/23/01 and a new claim 31 was added. This Second Preliminary Amendment amends claim 31 and adds new claims 32-60, which are fully supported by the original application as filed and are intended to more closely correspond to acceptable U.S. claiming format. The amendments to claim 31 are provided solely for the purpose of providing claim 31 in a form that more closely corresponds to acceptable U.S. claiming format. Therefore, claims 31-60 are now presented in connection with this application.

Attorney Docket: 658 0006 (AEQU PA 25 US)

It is believed that there are no additional fees due with the submission of this paper. However, if any additional fees are required in connection with the filing of this paper that are not identified, permission is given to charge Account No. 18-0013 in the name of Rader, Fishman & Grauer PLLC.

Respectfully submitted,

Date: January 22, 2002



Bradley J. Friedrich, Esq. (47,526)
Michael B. Stewart, Esq. (36,018)
Rader, Fishman & Grauer PLLC
39533 Woodward Ave., Suite 140
Bloomfield Hills, Michigan 48304
(248) 594-0600
Attorney for Applicants

R0134846

Attorney Docket: 658 305 (AEQU PA 25 US)

MARKED UP VERSION OF ALL AMENDED CLAIMS

31. (NEW) A [Heat] heat-exchanger tube[, particularly] suitable for [the] use in
an internal heat exchanger of a motor-vehicle high-pressure air-conditioning system, the
heat-exchanger tube comprising:

[with] a central channel [that features] having a closed wall[,]
[several] a plurality of projections extend into the central channel[,]; and

[with] a plurality of [several] outer channels that are arranged concentric to the
central channel and that are separated from each other by partitions.